Akro-Plastic Akromid® S3 GF 23 1 (2917) PA 6.10 Dry, 23% Glass Filled

Category : Polymer , Renewable/Recycled Polymer , Thermoplastic , Nylon , Nylon 610 , Nylon 610, Glass Reinforced

Material Notes:

A characteristic property of AKROMID® S (PA 6.10) is that it has a renewable-resource content of up to 70 % and therefore fulfils the current definition of a bioplastic. The plant-based raw material used is sebacic acid, synthesized from castor oil which is obtained from the seeds of Ricinus communis, the castor oil plant. From a technical standpoint, AKROMID® S closes the gap between PA 6/PA 6.6 and PA 12. It is characterized by significantly lower moisture absorption compared to PA 6 and PA 6.6. At 23 °C and 50 % relative humidity, typical values for these product types are 3 % and 2.8 %, respectively. With a value of approximately 1.4 %, PA 6.10 absorbs just half as much moisture and can therefore be used as an engineering material in applications requiring a high dimensional consistency. Moreover, it exhibits excellent cold impact resistance. Other outstanding characteristics include very good chemical resistance due to the structure of the polymer and high hydrolysis resistance, although it can be processed like all common polyamides. The materials from the PA 6.10 product family are further characterized by exceptional dimensional stability, good surface resistance, good abrasion resistance and wear behaviour, and an improved carbon footprint. This is due to the fact that the plant-based raw materials have already removed CO2 from the environment during their growth phase. The product portfolio currently comprises one non reinforced variant and several reinforced variants with a glass-fibre content ranging from 15 % to 50 %. AKROMID® S is a bioplastic according to today's standards. Unlike certain materials used in the packaging industry, however, the material is not biodegradable. The distinguishing feature of AKROMID® S is its reduced ecological footprint: The use of harmful CO2 per ton of polyamide produced from renewable resources is significantly lower compared to one ton produced from fossil-based resources, without affecting the product's performance characteristics.Applications:Automotive SectorConnectors and housingsNon-return valvesPower steering-fluid reservoirsCorrugated tubing and fluid pipesMachine Construction and Tool-BuildingGearsDoor handles and fittingsOffice equipment, housings, functional parts, amongst othersConnectors and plugsPower toolsSports and LeisureComponents in high-end garden toolsBicycle accessoriesSail-boat accessoriesWinter sports accessoriesInformation from Akro-Plastic

Order this product through the following link:
http://www.lookpolymers.com/polymer_Akro-Plastic-Akromid-S3-GF-23-1-2917-PA-610-Dry-23-Glass-Filled.php

Physical Properties	Metric	English	Comments
Density	1.25 g/cc @Temperature 23.0 °C	0.0452 lb/in³ @Temperature 73.4 °F	ISO 1183
Filler Content	23 %	23 %	ISO 1172
Water Absorption	1.3 % @Temperature 70.0 °C	1.3 % @Temperature 158 °F	62% r.h., Humdity; ISO 62
Linear Mold Shrinkage, Flow	0.0040 cm/cm	0.0040 in/in	ISO 294-4
Linear Mold Shrinkage, Transverse	0.0090 cm/cm	0.0090 in/in	ISO 294-4
Spiral Flow	45.0 cm	17.7 in	AKRO

Mechanical Properties	Metric	English	Comments

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	140 MPa	20300 psi	5 [mm/min]; ISO 527-1/2
Elongation at Break	4.5 %	4.5 %	5 [mm/min]; ISO 527-1/2
	5.0 %	5.0 %	Flexural, 2 [mm/min]; ISO 178
Tensile Modulus	7.00 GPa	1020 ksi	1[mm/min]; ISO 527-1/2
Flexural Strength	210 MPa	30500 psi	2 [mm/min]; ISO 178
Flexural Modulus	6.50 GPa	943 ksi	2 [mm/min]; ISO 178
Charpy Impact Unnotched	9.00 J/cm² @Temperature -30.0 °C	42.8 ft-lb/in² @Temperature -22.0 °F	ISO 179/1eU
	9.00 J/cm² @Temperature 23.0 °C	42.8 ft-lb/in² @Temperature 73.4 °F	ISO 179/1eU
Charpy Impact, Notched	1.00 J/cm² @Temperature -30.0 °C	4.76 ft-lb/in² @Temperature -22.0 °F	ISO 179/1eA
	1.50 J/cm² @Temperature 23.0 °C	7.14 ft-lb/in² @Temperature 73.4 °F	ISO 179/1eA

Thermal Properties	Metric	English	Comments
Melting Point	220 °C	428 °F	ISO 11357-1, DSC,10 [K/min]
Deflection Temperature at 1.8 MPa (264 psi)	200 °C	392 °F	HDT/A; ISO 75-1/2
Deflection Temperature at 8.0 MPa	115 °C	239 °F	HDT/C; ISO 75-1/2
Flammability, UL94	HB @Thickness 0.800 mm	HB @Thickness 0.0315 in	

Processing Properties	Metric	English	Comments
Feed Temperature	60.0 - 80.0 °C	140 - 176 °F	
Nozzle Temperature	240 - 295 °C	464 - 563 °F	
Zone 1	220 - 300 °C	428 - 572 °F	
Zone 2	220 - 300 °C	428 - 572 °F	
Zone 3	220 - 300 °C	428 - 572 °F	
Zone 4	220 - 300 °C	428 - 572 °F	
Melt Temperature	260 - 310 °C	500 - 590 °F	

Processing Properties	Metric	English	Comments
Mold Temperature	40.0 - 100 °C	104 - 212 °F	
Drying Temperature	80.0 °C	176 °F	
Dry Time	<= 4 hour	<= 4 hour	
Hold Pressure	30.0 - 80.0 MPa	4350 - 11600 psi	
Back Pressure	5.00 - 15.0 MPa	725 - 2180 psi	

Descriptive Properties	Value	Comments
Rate acc. FMVSS 302 (	Passed	
Rate acc. FMVSS 302,(	FMVSS 302, >1 [mm] Thickness	

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